

Appl. No. 09/978,253
Amendment fax-filed on August 16, 2004
Reply to Office Action of June 22, 2004

PATENT

Amendments to the Claims:

Please amend claim 15 as follows. No claims have been added or canceled. This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

1. - 14. (canceled)

15. (currently amended) The method of claim 22 [[23]], further comprising:
expanding the liquid at a first location within the balloon; and
expanding the liquid at a second location within the balloon to cryogenically
evenly cool the engaged vessel wall, the second location being circumferentially separated from
the first location.

16. (withdrawn) The method of claim 15, further comprising moving a
diffuser head between the first location and the second location.

17. (withdrawn) The method of claim 16, wherein a housing separates the
balloon and the vessel wall when the orifice head is at the first location, wherein fluid expansion
is initiated at the first location, and wherein the moving step moves ports of the diffuser head
from within the housing after a reduction in thermal transients of the gas expansion.

18. (original) The method of claim 15, wherein fluid expansion occurs
simultaneously at the first and second locations, the balloon being axially elongate, the first and
second locations being separated axially.

19. (previously presented) The method of claim 15, wherein the fluid
expansion occurs simultaneously at the first and second locations so that the fluid flows radially
toward the vessel wall.

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20. (original) The method of claim 15, wherein the first and second expansion steps comprise vaporization of at least a portion of the fluid from a liquid to a gas so that the enthalpy of vaporization cools the at least a portion of the engaged vessel wall.

21. (canceled)

22. (previously presented) A method for treating a blood vessel having a vessel wall, the method comprising:
introducing a catheter into the blood vessel;
expanding a balloon of the catheter near a target site within the vessel wall, the balloon having a balloon wall;
cooling the vessel wall with the balloon by coating at least a portion of an inner surface of the balloon wall with a liquid so that the liquid coating vaporizes, the coating engaging the balloon wall within the balloon.

23. (canceled)

24. (previously presented) A method for treating a blood vessel having a vessel wall, the method comprising:
introducing a catheter into the blood vessel;
expanding a balloon of the catheter near a target site within the vessel wall, the balloon having a balloon wall;
cooling the vessel wall with the balloon by coating at least a portion of an inner surface of the balloon wall with a liquid, the liquid vaporizing within the balloon.

25. (previously presented) The method of claim 24, wherein the at least a portion of the inner surface of the balloon wall is coated by introducing a cryogenic cooling fluid through a port into the balloon so that at least a portion of the cryogenic cooling fluid exits the port as the liquid.

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26. (previously presented) The method of claim 25, wherein the liquid coats the at least a portion of the inner surface of the balloon wall so as to enhance even cooling over at least a portion of the vessel wall engaged by the balloon.

27. (previously presented) The method of claim 26, wherein the liquid coating the balloon wall vaporizes while the coating engages the balloon wall within the balloon.